WHAT IS CLAIMED IS:

1. Method of fusion of a first digital radiographic image obtained as a result of scanning with a second digital radiographic image obtained by magnetic resonance imaging (MRI), in which a CT interval of gray levels is selected in the scanner image and each pixel of said scanner image having a gray level lying within the CT interval is replaced by a pixel obtained by digital processing of the pixel of the same coordinates as the MRI image, the final image corresponding to the scanner image in which the pixels of gray levels lying within the CT interval are thus modified.

2. Method according to Claim 1, characterized in that a two-dimensional recentering of both MRI and scanner images is carried out by means of at least one rotation and/or translation operation, so that a pixel of said scanner image of coordinates (x,y) and a pixel of the MRI image of the same coordinates (x,y) represent the same portion of the organ X-rayed.

3. Method according to one of the foregoing claims, characterized in that the upper limit B_{CT} of the CT interval is fixed at a gray level value on the Hounsfield scale, said gray level corresponding to the highest value of the gray levels representing the soft tissues visualized on the scanner image.

4. Method according to one of the foregoing claims, characterized in that the lower limit A_{CT} of the CT interval is fixed at a gray level value on the Hounsfield scale, said gray level corresponding to the lowest value of the gray levels representing soft tissues visualized on the scanner image.

5. Method according to one of the foregoing claims, characterized in that one selects another MR interval of gray levels in the MRI image, whose upper limit B_{MR} corresponds to a gray level above which the pixels are white.

6. Method according to Claim 5, characterized in that the lower limit A_{MR} of the MR interval corresponds to a gray level below which the pixels are black.

7. Method according to one of the foregoing claims, characterized in that the digital processing consists of a linear interpolation.

8. Method according to Claim 7, characterized in that the linear interpolation introduces an affine function integrating the value of the lower limit A_{CT} and upper limit B_{CT} of the CT interval in the scanner image and the value of the lower limit A_{MR} and upper limit B_{MR} of the MR interval in the MRI image.

9. Method according to Claim 8, characterized in that for a scanner pixel having a gray level V_{CT} lying within the CT interval, the gray level V_{MR} of the corresponding pixel in the MRI image is determined, and then a gray level in the CT interval is determined from said affine function and from said level V_{MR}; the gray level V_{OUT} of each pixel of the final image is then obtained by the following algorithm:

- if $V_{CT} < A_{CT}$, then

1) $V_{OUT} = V_{CT}$,

- if $V_{CT} > B_{CT}$, then

2) $V_{OUT} = V_{CT}$,

- if $A_{CT} < V_{CT} < B_{CT}$, then

3) $V_{OUT} = A_{CT} + (B_{CT} - A_{CT})\,(V_{MR} - A_{MR})/(B_{MR} - A_{MR})$.

10. System of fusion of a first digital radiographic image obtained by scanning with a second digital radiographic image obtained by MRI, characterized in that it comprises:

- a means of reading pixels of the scanner image, the gray levels of which lie within a predetermined CT interval,

- a means of reading pixels of the MRI image, the coordinates of which are identical to those of the pixels of the CT interval of the scanner image,

- a means of calculation of a third image composed of the scanner image in which the pixels whose gray levels lie within the CT interval are replaced by pixels obtained by digital processing of the pixels of the same coordinates as the MRI image in order to obtain an image making possible visualization of the soft tissues and bony tissues.

Add A1